

5

ANIMAL TOY

by

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## ANIMAL TOY

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This invention relates to toys.

10 More particularly, the invention relates to a toy for an animal.

15 In a further respect, the invention relates to an animal toy which when thrown can bounce erratically, which minimizes the probability of harm to an animal trying to catch a toy which has been thrown, which is symmetrical but is shaped to include points at varying distances away from the center of the toy to enable the toy to bounce erratically, which is permanently sealed so that the toy repeatedly compressively elastically deforms and bends in the same predictable manner, which includes a soft fabric outer surface that compresses to absorb blows and soften the impact when the toy hits an animal or other surface, and which can withstand being bitten or chewed by a dog and continue to function.

20 A wide variety of animal toys are known. One kind of toy is made of hard rubber and comes in a variety of shapes. For example, a dog bone made of hard, tough rubber has long been sold in retail outlets. A hard, tough rubber is utilized to make it difficult for a dog to chew through the bone. The rubber also adds weight to the toy, permitting the toy to be thrown long distances. Finally, the rubber material used to make the toy also enables the toy bone to bounce into

the air. Dogs like chasing bouncing toys. While this type of toy is without question resistant to be damaged or chewed up, the toy is also dangerous. If the toy when thrown bounces into a dog, the toy can, due to its hardness, injure the animal. Worse, if the bone is thrown in the air and hits the dog straight away before the bone hits the ground, the dog can also be injured.

Accordingly, it would be highly desirable to provide an improved dog's toy which can be thrown a long distance to bounce in an erratic pattern liked by dogs while producing only a small risk that the toy will injure a dog.

Therefore, it is a principal object of the instant invention to provide an improved toy.

A further object of the invention is to provide an improved animal toy which reduces the risk that the toy will, when thrown, injure an animal chasing the toy.

Another object of the invention is to provide an improved animal toy which elastically compresses and bends to minimize the risk of injury to an animal.

These and other, further and more specific objects and advantages of the invention will be apparent to those skilled in the art from the following detailed description thereof, taken in conjunction with the drawings, in which:

Fig. 1 is a perspective view of a hollow elastic fabric-covered toy constructed in accordance with the principles of the invention;

Fig. 2 is a perspective view of another hollow elastic fabric-covered toy constructed in accordance with the principles of the invention;

Fig. 3 is a perspective view of still another hollow, elastic fabric-covered toy constructed in accordance with the principles of the

invention; and,

Fig. 4 is a side elevation view of the toy of Fig. 1 bouncing end-over-end in a constant fixed direction after being thrown and landing on the ground.

5 Briefly, in accordance with the invention, I provide an improved animal toy. The toy includes a compressibly elastically deformable hollow thin-walled rubber core sealingly circumscribing and enclosing a selected compressible gaseous volume. The rubber core includes a center, an outer surface, a wall less than about three-  
10 sixteenths of an inch thick, and points on the outer surface at varying distances from the center. A felt cover is affixed to the outer surface of the core. At least one elongate strip of material extends over the outer surface as a line of demarcation to separate the felt cover into at least two areas, one on either side of the strip of material.

15 In another embodiment of the invention, I provide an improved animal toy. The toy includes a compressibly elastically deformable hollow thin-walled rubber core sealingly circumscribing and enclosing a selected compressible gaseous volume. The rubber core includes a center; an outer surface; a wall less than about three-  
20 sixteenths of an inch thick; points on the outer surface at varying distances from the center; and, an inner wall portion circumscribing an aperture extending completely through the core. A felt cover is affixed to the outer surface of the core.

25 In a further embodiment of the invention, I provide an improved animal toy. The toy includes a compressibly elastically deformable thin-walled hollow symmetrical rubber core sealingly circumscribing and enclosing a selected compressible gaseous volume. The rubber core includes a center; an outer surface; a wall less than about three-sixteenths of an inch thick; and, points on the outer

surface at varying distances from the center. A felt cover is affixed to the outer surface of the core. The symmetrical core is shaped and dimensioned such that the toy can be thrown to bounce along a straight line, and such that the direction of travel of the toy changes from bounce to bounce.

In still another embodiment of the invention, I provide an improved animal toy. The toy includes a compressibly, elastically deformable thin-walled hollow rubber core sealingly circumscribing and enclosing a selected compressible gaseous volume. The rubber core includes a center; an outer surface; a wall less than about three-sixteenths of an inch thick; points on the outer surface at varying distances from the center; and, an inner wall portion circumscribing an aperture extending completely through the core. The core is shaped and dimensioned such that the toy when thrown randomly bounces erratically. A felt cover is affixed to the outer surface of the core. A length of rope extends through the aperture such that the rope can be grasped to throw the toy.

In yet another embodiment of the invention, I provide an improved animal toy. The toy includes a compressibly, elastically deformable thin-walled hollow rubber core sealingly circumscribing and enclosing a selected compressible gaseous volume. The rubber core includes a center; an outer surface; a wall less than about three-sixteenths of an inch thick; and, points on the outer surface at varying distances from the center. The core is shaped and dimensioned such that the toy when thrown randomly will bounce erratically. A felt cover is affixed to the outer surface of the core and includes a plurality of fibers forming a soft compressible layer adjacent the outer surface.

In still yet another embodiment of the invention, I provide an improved animal toy. The toy includes an elongate compressibly,

elastically deformable bendable thin-walled hollow rubber core  
sealingly circumscribing and enclosing a selected compressible gaseous  
volume. The core includes a center; an outer surface; a wall less than  
about three-sixteenths of an inch thick; and, points on the outer  
5 surface at varying distances from the center. The core is shaped and  
dimensioned such that the toy when thrown randomly will bounce  
erratically. A felt cover is affixed to the outer surface of the core and  
includes a plurality of fibers forming a soft compressible layer adjacent  
the outer surface.

10 Turning now to the drawings, which describe the presently  
preferred embodiments of the invention for the purpose of illustrating  
the practice thereof and not by way of limitation of the scope of the  
invention, and in which like characters refer to corresponding elements  
throughout the several views, Fig. 1 illustrates a toy including a hollow  
15 cylindrical rubber core 11. If desired, supporting walls can be formed  
inside of hollow core 11 much like bulkheads are formed inside the  
hollow hull of a ship. Pieces 12, 13 of felt or another desired fabric are  
adhesively secured or otherwise affixed to the outer cylindrical surface  
28 of core 11. Fabric pieces 12, 13 are shaped and dimensioned and  
20 applied to surface 28 such that a space or groove of substantially  
constant width between the pieces 12, 13 is formed. This track is filled  
with an elastic rubber material to form strip 14. Alternatively, one or  
more fabric pieces can be utilized to completely cover surface 28, after  
which a strip 14 of material can be attached on or in the fabric to form  
25 a strip 14 dividing the fabric into sections on either side of the strip 14.  
Strip 14 presently has a width in the range of one-sixteenth to seven-  
sixteenths of an inch, preferably two-sixteenths to five-sixteenths of an  
inch.

Cylindrical end piece 18 includes rubber piece 19 and fabric

piece 20 adhesively secured or otherwise secured to piece 19. End piece 18 is secured to circular end surface or lip 22.

Cylindrical end piece 15 includes rubber piece 16 and fabric piece 17 adhesively secured or otherwise secured to piece 17. End piece 15 is secured to circular end surface or lip 21.

After end pieces 15 and 18 are secured to the ends of core 11, rubber pieces 19 and 16 and core 11 circumscribe and seal closed cylindrical volume 29.

The fabric used to cover surface 28 is presently preferably felt because felt provides a soft surface which reduces the strength of a blow to an animal when the toy inadvertently strikes an animal. Felt also resiliently compresses to absorb some of the force of the blow. While any felt can be utilized, the preferred felt comprises a firm woven cloth of wool or cotton heavily napped and shrunk to form a smooth resilient texture.

The core 11 of the toy of the invention must be fabricated from rubber because core 11 must be able to be elastically compressed. As used herein, the term rubber includes natural or synthetic rubbers and polymers or other components which produce materials having the properties of a rubber.

Since the wall of hollow core 11 must have "give", it is important in the practice of the invention that the wall be relatively thin. The thickness, indicated by arrows A in Fig. 1, of the wall of core 11 is in the range of about one-sixteenth of an inch to five-sixteenths of an inch, preferably one-sixteenth of an inch to three-sixteenths of an inch.

At the same time, the rubber utilized to make core 11 must be relatively tough so that a dog or other animal cannot with its teeth readily puncture core 11.

Another important feature of the toy of the invention is that core 11 must sealingly circumscribe a gaseous volume 29. Volume 29 ordinarily is filled with air, but nitrogen or any other desired gas can be utilized. It is acceptable for the gas to have some moisture content; however, filling volume 29 with a fluid is not presently preferred because the fluid can add substantial weight to the toy and because the fluid does not compress as readily as a gas. After core 11 and end pieces 15 and 18 are assembled and sealingly enclose volume 29, additional gas can, if desired, be added to volume 29 to pressurize volume 29. Any desired method can be utilized to pressurize volume 29. For example, a composition can be put into volume 29 during manufacture. After member 11 and pieces 15 and 18 are assembled to sealingly enclose volume 29 and enclose the composition in volume 29, the assembled unit is heated to cause the composition to release gas to pressurize volume 29.

Pressurizing volume 29 is preferred because the pressure helps to support the wall of core 11 while still not preventing the wall of core 11 from being elastically compressed.

The center point 40 of the toy of Fig. 1 is circumscribed by and spaced apart from the cylindrical wall of core 11. Point 40 is also equidistant from each end piece 15, 18. The center point of a toy constructed in accordance with the invention is generally at an average distance from points, lines, or angle on the exterior of the toy. It is important that each toy include points on its exterior which are not equidistant from the center point of the toy. This construction insures that the toy will have the ability to bounce erratically. A toy with all surface points equidistant from the center of the toy is not utilized in the practice of the invention.

As earlier noted, elastic core 11 can be compressed, i.e., the



cylindrical wall of core 11 can be elastically pushed inwardly. Another important feature which can be incorporated into toys constructed in accordance with the invention is that they can be bent. In Fig. 1 for example, after the toy is assembled, end piece 18 can be moved in the direction of arrow L simultaneously with the movement of end 15 in the direction of arrow M. When an object is bent, part of the object is subject to tensile forces while another opposed part of the object is subjected to compressive forces.

The hollow toy 25 illustrated in Fig. 2 includes a doughnut-shaped rubber core 26 which sealingly encloses gas-filled volume 40. Felt cloth 27 or other fabric substantially completely covers the outer surface of core 26 in the same manner that cloth pieces 12 and 13 cover substantially the entire outer surface 28 of the toy shown in Fig. 1. Cylindrical aperture 44 extends completely through toy 25. Knot 41 formed in rope 42 does not fit through aperture 25, which permits end 43 to be grasped manually so that the rope 42 and toy 25 can be twirled and thrown.

The toy 30 illustrated in Fig. 3 includes three hollow cylindrical legs 31, 32, 33 which co-terminate to form a three-legged toy. While the angles between legs can vary and the number of legs in the toy can vary, it is presently preferred that the legs 31 to 33 be normal to each other.

As used herein, when a toy is thrown "randomly", the toy is thrown without any attempt to control the orientation of the toy in the air. When the toys illustrated in Figs. 1 to 3 are thrown randomly, it is highly likely that they will bounce erratically when they hit the ground. It is possible, however, for each toy to be thrown so it will not bounce erratically. For example, as shown in Fig. 4, the toy in Fig. 1 can be thrown end-over-end toward the ground in the direction of arrow

Y, hit the ground, and continue to travel in the direction of arrow D. This does not constitute an erratic bounce because after the toy hits the ground it continues to travel in the same direction D.

Similarly, it is possible to throw the toy of Fig. 2 like a  
5 frisbee, such that the toy 25 hits or lands on the ground flat on one of its two opposed circular faces and stops dead. This does not constitute an erratic bounce because the toy 25 does not bounce. Throwing the toy to accomplish such a landing is difficult at best. Alternately, toy 25 can be thrown in a vertical orientation which causes it to land on edge  
10 on the ground and roll in a straight line. This is difficult to accomplish on a consistent basis, especially if rope 42 is still in the toy 25 when it lands. To insure that rope 42 stays in the toy, a knot can also be formed in end 43 which will not pass through aperture 44.

Throwing toy 30 of Fig. 3 so that it will not bounce  
15 erratically is difficult. It is possible to throw toy 30 so that it will make a three-point landing with the distal end of each leg 31 to 33 hitting the ground simultaneously or almost simultaneously so that toy 30 hits the ground and stops dead. Such a three point landing is highly unlikely.

As used herein, a toy has an erratic bounce when, after it  
20 hits the ground, it moves in a direction different from the direction it was traveling just prior to hitting the ground.

One important reason why toys with an erratic bounce are  
critical in the practice of the invention is that when a toy makes an erratic bounce the speed of travel of the toy after the bounce appears  
25 less, sometimes significantly less, than if the toy continues in the same direction of travel after the toy bounces. Since a primary object of the invention is to minimize the risk of injury to an animal, it is imperative that a toy not continue going in the same direction like a freight train after it hits the ground, but that some of the inertia of the toy be

consumed by insuring that the toy bounce erratically. The ability of the toy to be compressed and to be bent on contacting the ground also consumes some of the toy's inertia.

5 Having set forth the presently preferred embodiments of my invention in such terms as to enable those skilled in the art to make and use the invention, I Claim:

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